## REMARKS

In the Final Office Action, the Examiner: (i) rejected claims 1-3 and 5-16 under 35 U.S.C. § 112, ¶ 1 for failing to comply with the written description requirement; (ii) provisionally rejected claims 1 –3 and 5 –16 on the grounds of nonstatutory obviousness-type double patenting over claims 5 – 8 of copending Application No. 10/470,890 and provisionally rejected claims 1 – 16 on the grounds of nonstatutory obviousness-type double patenting over claims 27 – 54 of copending Application No. 10/467,357; (iii) rejected claims 1-3 and 5-16 under 35 U.S.C. § 103(a) over each of Soothill (WO 00/55354), Johnson (WO 00/24753), Lawrence (5,571,684), Cauci (Immunoglobulin A Response Against Gardnerella vaginalis Hemolysin and Sialidase Activity in BV), Cauci (Impairment of the Mucosal Immune System), McGregor (Bacterial Vaginosis is Associated With Prematurity and Vaginal Fluid Mucinase and Sialidase), and Briselden (Sialidases (Neuraminidases) in BV and BV Associated Microflora); (iv) rejected claims 1-3 and 5-16 under 35 U.S.C. § 112, ¶ 1 for failing to comply with the enablement requirement; and (v) rejected claims 1-3 and 5-16 under 35 U.S.C. § 112, ¶ 2 for being indefinite.

At this time, Applicant has amended the claim set as follows. Claims 1 and 28 have been amended to recite that the OR value is calculated as a ratio between the percentage of women having pathologies and the percentage of women having no pathologies. Support for this amendment may be found on page 12, paragraph 29, lines 4 – 7 of the specification as filed. Further, in claims 1, 7, 8, 9, 10, 12 and 28 Applicant has deleted the term "cervo-," and in other claims Applicant has made amendments to address the Examiner's concerns about antecedent basis and indefiniteness. No new matter has been added by these amendments.

**Response to Rejection under 35 U.S.C. § 112 (written description)**

The Examiner rejected claims 1-3 and 5-16 under 35 U.S.C. § 112, ¶1 for failing

to comply with the written description requirement. The Examiner asserted that the phrase "cervo-vaginal fluid" is new matter and is not found in the specification as filed. Applicant expresses no opinion as to the merits of the Examiner's position, but has removed all references to "cervo-" from the phrase, thereby leaving the phrase "vaginal fluid," in the claims. The phrase "vaginal fluid" is supported throughout the specification. See *e.g.,* Par. 23, page 9, line 15; Par. 25 page 10, line 4; Par. 32, page 13 line 3; Par. 53, page 22, line 4. In view of the amendment, Applicant respectfully submits that this rejection should be withdrawn.

**Response to Rejections under Doctrine of Obviousness-Type Double Patenting**

The provisional rejections have been made with respect to claims of pending patent applications. Because no patent has issued for those claims, Applicant respectfully submits that should the present claim set be deemed allowable, the rejection should be withdrawn. However, should the Examiner maintain the rejection and the pending claims over which the current claims have been rejected be allowed, Applicant will address the issue at that time. Accordingly Applicant reserves the right to argue against the merits of the rejection and if Applicant deems appropriate to file one or more terminal disclaimers.

**Response to Rejection under 35 U.S.C. § 103**

The Examiner rejected claims 1-3, 5-16 under 35 U.S.C. § 103(a) as being unpatentable over each of Soothill (WO 00/55354), Johnson (WO 00/24753), Lawrence (5,571,684), Cauci (Immunoglobulin A Response Against Gardnerella vaginalis Hemolysin and Sialidase Activity in BV), Cauci (Impairment of the Mucosal Immune System), McGregor (Bacterial Vaginosis is Associated With Prematurity and Vaginal Fluid Mucinase and Sialidase), and Briselden (Sialidases (Neuraminidases) in BV and BV Associated Microflora). For at least the reasons provided below, Applicant respectfully submits that the Examiner failed to demonstrate a *prima facie* case of obviousness with respect to any of the cited references.

*Soothill.* The Examiner asserts that Soothill "teaches on page 4 a test for sialidase activity as an indicator of BV and therefor a predictor of the likelihood of preterm birth."

However, the Examiner fails to show how Soothill renders each and every limitation of the claims obvious. Most notably, whereas the reference discloses a correlation, it fails to teach, disclose or otherwise suggest how to use the correlation to select a particular population of women having the described risk

By contrast, Applicant has demonstrated in his subject specification, and recited in the claims, that the information is of particular value if one (a) limits the samples to those having sialidase values equal to or greater than 5.0 nmol and a pH of greater than or equal to 5.0; and (b) uses this information to select a population at risk where the risk is determined by a specific ratio (the ratio between the percentage of women having pathologies and those women having no pathologies) and the population is selected when the ratio is 5.5 or higher. The Examiner has not pointed to any portion of Soothill that uses the information in this manner.

With respect to the failure of Soothill (and the other cited art) to disclose these limitations, the Examiner wrote: "Regarding the selection of some odds ratio being calculated from some level of detected sialidase and/or prolidase, no novelty is seen in such selection because each of the references show data, usually presented as a curve, where at some cutoff some degree of correlation between enzyme level detected and pathology may be inferred." (Page 6) However, Applicant respectfully submits that the Examiner has failed to appreciate the difference between recognizing a correlation (as was done in Soothill) and inventing a method of using the evidence of correlation to develop a means for quantitatively determining a risk and calculating a risk factor.

*Johnson.* The Examiner asserts that Johnson "teaches on page 2 first paragraph, measurement of sialidase level in vaginal samples could be used to diagnose bacterial vaginosis." However, the Examiner has not shown where the reference either correlates this information with increased OR, or how to use this information to determine a risk and calculate a risk factor.

*Lawrence.* The Examiner asserts that Lawrence "teaches in column 2 first full paragraph, vaginal pH of women with BV or trich is above 4.5, whereas the normal vaginal pH is less than 4.5. In column 7, second full paragraph, the substrate detects peptidases where the substrate residue is proline." As with Johnson, the Examiner has

not shown where the reference either correlates this information with increased OR, or how to use this information to determine a risk and calculate a risk factor.

*Cauci (Am J Obstet Gynecol).* The Examiner asserts that this reference "teaches in the abstract, there is a correlation between sialidase activity in vaginal fluids and bacterial vaginosis." As with Johnson and Lawrence the Examiner has not shown where the reference either correlates this information with increased OR, or how to use this information to determine a risk and calculate a risk factor.

*Cauci (J of Infect Diseases).* The Examiner asserts that this reference "teaches on page 1698, BV is associated with preterm delivery, chorioaminoitis, amniotic fluid infections, post cesarean endometreities, salpingitis, and HIV infection. On page 1701 sialidase activity correlated with BV and to a lesser extent prolidase where no prolidase activity was detected in healthy women." As with Johnson, Lawrence and the previous Cauci reference, the Examiner has not shown where this reference teaches, discloses or otherwise suggests how to use this information to determine a risk and calculate a risk factor.

*McGregor.* The Examiner asserts that this reference "teaches in the abstract preterm birth and other adverse pregnancy outcomes are linked with infection. Sialidiases from BV are associated with vaginal microorganisms and intrauterine infection and preterm birth." As with the previous references, the Examiner has not shown where this reference teaches, discloses or otherwise suggests how to use this information to determine a risk and calculate a risk factor.

*Briselden.* The Examiner asserts that this reference "teaches in the abstract, BV is associated with prematurity and upper genital tract infection. Elevated levels of sialidase activity is highly associated with BV." As with the previous references, the Examiner has not shown where this reference teaches, discloses or otherwise suggests how to use this information to determine a risk and calculate a risk factor.

On page 6, the Examiner acknowledges that the cited references do not teach, disclose or otherwise suggest how to use the known correlation to determine a risk based on repeatable and quantified methods or for calculating a risk factor. Applicant respectfully submits that the determination of the precise cutoff to which the Examiner

refers and using it to determine risks and calculate risk factors was neither known nor obvious in view of the cited art.

Applicant has demonstrated in his specification that in order for the data to be predictive of risk factors with a satisfactory confidence interval, it is important to use a ratio cut off of 5.5 as reflected in the pending claims under the recited pH limitation. *See e.g.,* data summarize in the Tables 1 –3 of the specification (par 0041 "it has been found a dramatic increment in the OR values when a high sialidase level and a pH ≥ 5.0 are detected"; par 0046 "What appears from the data is that a combination between pH ≥ 5.0, any one of the sialidase levels ≥+1, ≥+2 or ≥+3 and prolidase levels ≥+4 or ≥+5 results in significant OR above 5.5 for PTD. ). Inventing a method that embodies this critical limit is precisely the type of innovation that the patent laws are designed to protect. Further, that Applicant invented his method performing analyses on the types of data and known correlations that already exist is of no moment. "Patentability shall not be negatived by the manner in which the invention was made." 35 U.S.C. § 103(a). Thus, the claimed inventions is not obvious merely because its novel methods build up known correlations.

**Response to Rejection under 35 U.S.C. § 112 (enablement)**

The Examiner rejects claims 1 – 3 and 5-16 for allegedly failing to comply with enablement requirement. For at least the reasons that follow, Applicant respectfully submits that the rejection is improper.

First, the enablement requirement is satisfied if the specification teaches how to practice at least embodiment of the claimed invention. *Invitrogen v. Clontech,* 429 F.3d 1052, 1071 (Fed. Cir. 2005) (enablement requirement is met if the description enables any mode of making and using the invention). The Examiner acknowledges that the specification provides working examples for at least a few specific fluids. (Page 8 of Office Action) In view of this admission, the enablement rejection is improper.

Second, the Examiner asserts that claim 5 is problematic because it lists a number of pathologies and he does not seen how the present invention could predict the risk of all of the identified maladies. Applicant respectfully submits that this is not a proper

rejection under the enablement requirement.

As Applicant describes in paragraph 0002 of the specification, "[s]everal pathologies correlated to obstetric and gynecologic complications are well known to the physician." Applicant's claimed method describes following the specified steps in order to identify the population of women having a risk of the delineated pathologies. As Applicant has described in the specification, these obstetric and gynecologic complications are already known to have pathologic correlations. Thus, the Examiner is improperly rejecting as non-enabled what is known in the prior art.

Third, Applicant respectfully submits that the Examiner's assertion the entire scope of the claims has not been enabled, is inappropriate. On the bottom of page 8 through the top of page 9, the Examiner cites the Wands factors and focuses on two issues: (i) the number of fluids; and (ii) the alleged unpredicatability of the art.

With respect to the number of fluids, Applicant notes that both of the independent claims specify that the level of sialidase and/or prolidase activity is measured in samples of vaginal fluid. Thus, the Examiner's suggestion that other fluids are not effective is not relevant given the current claim set.

With respect to the level of predictability of the art, Applicant respectfully submits that the Examiner has not met his burden of identifying which limitation is impacted by the unpredictability – the mathematical calculations, the determination of levels of sialidase and/or prolidase activity, the determining of pH values or the selection of a sample. Absent an identification of to which limitation the rejection applies, Applicant respectfully submits that the rejection is improper.

Finally, the Examiner concludes: "It is the examiner's position that the rejection is based on the specification as originally filed does not enable one to select the risk of developing any and all obstetric or gynecologic pathologies." Applicant appreciates the Examiner's concern. However, as noted above, this concern is not an appropriate base for a rejection under the enablement requirement.

The issue of enablement turns on whether the limitations with the claims at issue are enabled. *CFMT Inc. v. Yieldup International Corp.,* 349 F.3d 1333, 1338 (Fed. Cir. 2003); *AK Steel Corp. v. Sollac,* 344 F.3d 1234, 1241 (Fed. Cir. 2003). Applicant

requests that if the Examiner maintains this rejection, he clarify specifically to which claims it applies and quotes the language of the limitation that he deems non-enabled.

**Response to Rejection under 35 U.S.C. § 112 (indefiniteness)**

The Examiner rejects claims 1 – 3 and 5 – 16 for allegedly being indefinite. Each of the issues raised by the Examiner has been addressed through the amendments above. For example, Applicant has amended the pending independent claims to begin with an indefinite article and the dependent claims to begin with a definite article (claims 1 – 3 and 5- 16). Applicant has also amended claim 1 to address proper antecedent basis, amended claim 2 to identify with respect to what the pH is taken, amended claim 3 to clarify to what the phase refers, removed uses of the term "preferably" in claims 2, 6 and 16 and added dependent claims 29 – 33, which are directed to the subject matter than followed the term "preferably in claims 2, 6 and 16; deleted the apostrophe from "weeks"" in claim 12; and reworded claim 28 to address the Examiner's concerns. No new matter has been added.

**Request for Telephonic Interview**

In order to facilitate prosecution and to address any concerns that the Examiner may have, Applicant respectfully requests a telephonic interview at a time convenient for the Examiner.

**Conclusion**

In view of the foregoing amendments, and the remarks set forth above, reconsideration and allowance are respectfully solicited.

The Patent Office is authorized to charge Deposit Account No. 11-0171 for both the fee for a two month extension of time in which to respond to the Office Action and a Request for Continued Examination.

If the Examiner has any questions regarding the present application, the Examiner

is cordially invited to contact Applicant's attorney at the telephone number provided below.

Respectfully submitted,

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